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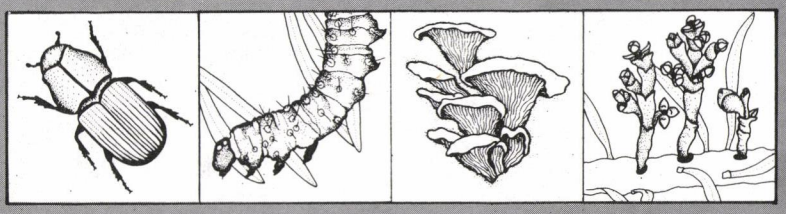

Report 83-20 December 1983

SIROCOCCUS STROBILINUS ON CONTAINERIZED ENGELMANN SPRUCE SEEDLINGS AT THE COEUR D'ALENE NURSERY, IDAHO

by

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Sirococcus strobilinus Preuss is often associated with shoot blight of conifers, including seedlings grown in nurseries. The fungus has been reported attacking foliage of bareroot nursery stock, particularly pines (Smith 1973; Srago 1978) and spruce (Magasi et al. 1975). Less well known is a seedborne disease caused by S. strobilinus on containerized spruce (Sutherland and Van Eerden 1980; Sutherland et al 1981). In this case, Sirococcus attacks very young seedlings, killing the primary needles from the base upward. Dead seedlings remain upright and usually small black pycnidia form at the base of infected needles. Diseased seedlings usually occur randomly, characteristic of seedborne diseases (Sutherland and Van Eerden 1980).

During the spring of 1983, dead and dying containerized Engelmann spruce (Picea engelmanni Parry) seedlings, about 1 month old, were examined at the Coeur d'Alene Nursery in Idaho. Growers thought the mortality was caused by common post-emergence damping-off fungi. However, upon close examination, it was apparent that affected seedlings remained upright (figure 1) instead of falling over, as expected with damping-off. Examination of recently killed seedlings under the binocular microscope revealed presence of black fruiting bodies at the base of necrotic needles.

These signs and symptoms indicated that seedlings might be infected with S. strobilinus (Robak 1956). Spores from pycnidia were hyaline, two-celled, and spindle-shaped (figure 2). Growth habit in culture also corresponded to that described for S. strobilinus (Robak 1956).

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Figure 1.--One-month-old containerized Engelmann spruce seedling infected with S. strobilinus at the Coeur d'Alene Nursery, Idaho. Necrotic seedlings remained upright and black pycnidia were found at the base of infected needles.

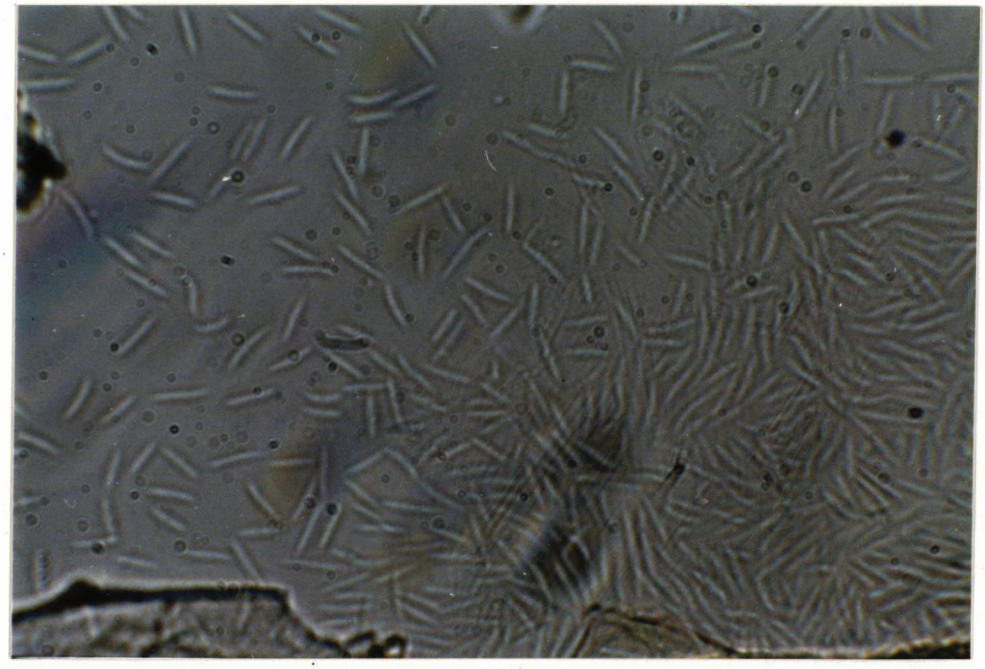

Figure 2.--Conidia of S. strobilinus from pycnidia produced on containerized Engelmann spruce seedlings from the Coeur d'Alene Nursery, Idaho. Conidia are hyaline, two-celled and spindle-shaped (X450).

This is the first report of S. strobilinus on containerized conifer seedlings in the Northern Region. Although the disease is common in British Columbia (Sutherland and Van Eerden 1980), it is apparently not prevalent in container nurseries of the United States. This may be due to reduced seed infection rate or lack of diagnosis in the United States.

This disease did not cause extensive losses to containerized spruce at the Coeur d'Alene Nursery. However, severe damage to 1-0 ponderosa pine (Pinus ponderosa Laws.) seedlings by S. strobilinus has been reported at private nurseries in nearby Bonners Ferry (Schwandt 1981). Therefore, growers should be aware of this disease and its potential for causing severe losses. Containerized seedlings should be closely monitored for Sirococcus symptoms to evaluate potential for future damage.

LITERATURE CITED

Magasi, L. P., S. A. Manley, and R. E. Wall.
1975. Sirococcus strobilinus, a new disease of spruce seedlings in Maritime nurseries. Plant Dis. Reptr. 59: 664.

Robak, H.
1956. Some fungi occurring on died-back tops and branches of Picea abies and Abies spp. in western Norway. Friesia 5: 366-389

Schwandt, J. W.
1981. Sirococcus tip blight in north Idaho nurseries. Idaho Dept. of Lands. Rept. 81-7. 13 pp.

Smith, R. S., Jr.
1973. Sirococcus tip dieback of Pinus spp. in California forest nurseries. Plant Dis. Reptr. 57: 69-73.

Srago, M. D.
1978. Nursery disease problems - Sirococcus strobilinus. In Gustafson, R. W. (ed.). Proc. 1978 Nurserymen's Conference & Seed Processing Workshop. Western Forest Nursery Council & Intermountain Nurserymen's Assoc. pp. B-134-B-137.

Sutherland, J. R. and E. Van Eerden.
1980. Diseases and insect pests in British Columbia forest nurseries. Brit. Col. Min. of For. - Can. For. Ser., Joint Rept. No. 12. 55 pp.

Sutherland, J. R., W. Lock, and S. H. Farris.
1981. Sirococcus blight; a seedborne disease of container-grown spruce seedlings in Coastal British Columbia forest nurseries. Can. J. Bot. 59: 559-562.